1. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-30}{35x-10}+1=\frac{-30}{35x-10}$$

A. $x \in [0.29, 2.29]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-0.4, 0.2]$

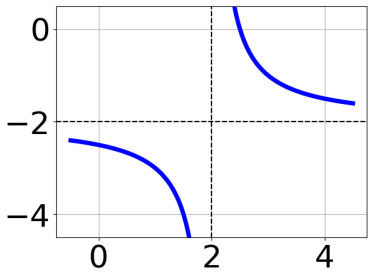
D. $x_1 \in [-0.4, 0.2]$ and $x_2 \in [-0.71, 2.29]$

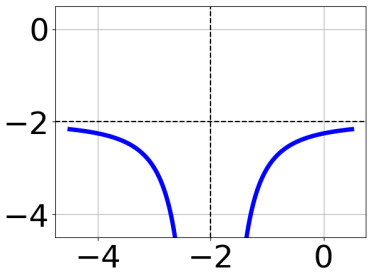
E. $x_1 \in [0.2, 0.8]$ and $x_2 \in [-0.71, 2.29]$

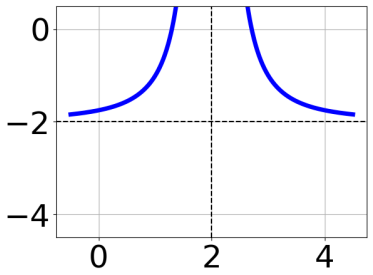
---

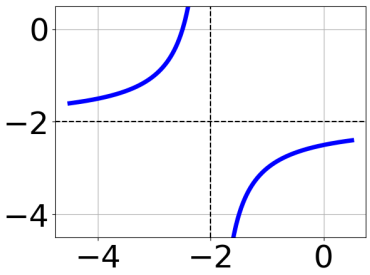
2. Choose the graph of the equation below.

$$f(x)=\frac{1}{(x-2)^2}-2$$

A.


C.


B.


D.


E. None of the above.

---

3. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{2x}{7x+2}+\frac{-5x^2}{-35x^2-31x-6}=\frac{4}{-5x-3}$$

A. $x \in [-0.53, 0.55]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [-2.69, -1.04]$ and $x_2 \in [-0.27, -0.24]$

D. $x \in [-0.88, -0.31]$

E. $x_1 \in [-2.69, -1.04]$ and $x_2 \in [-0.3, -0.28]$

---

4. Determine the domain of the function below.

$$f(x) = \frac{6}{36x^2 + 54x + 20}$$

A. All Real numbers except $x = a,$ where $a \in [-30.08, -29.84]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b,$ where $a \in [-0.86, -0.73]$ and $b \in [-0.73, -0.5]$

D. All Real numbers except $x = a,$ where $a \in [-0.86, -0.73]$

E. All Real numbers except $x = a$ and $x = b,$ where $a \in [-30.08, -29.84]$ and $b \in [-24.13, -23.8]$

---

5. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-9}{4x - 4} + -6 = \frac{-6}{-20x + 20}$$

A. $x_1 \in [-3.42, 0.57]$ and $x_2 \in [0.49, 0.7]$

B. $x \in [-3.42, 0.57]$

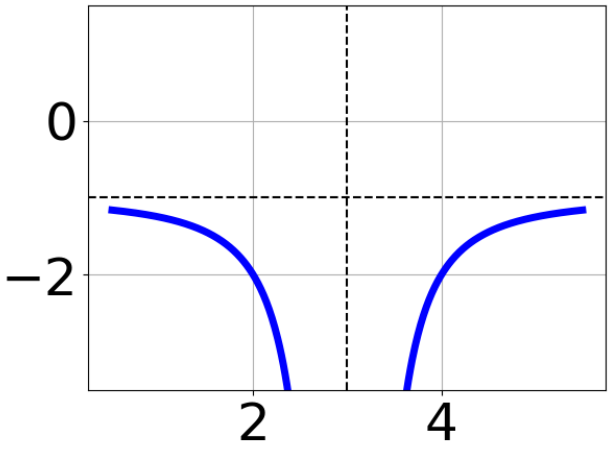
C. $x_1 \in [0.57, 3.58]$ and $x_2 \in [0.74, 1.39]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [0.57, 1.57]$

---

6. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{(x-3)^2} - 1$

B. $f(x) = \dfrac{1}{(x+3)^2} - 1$

C. $f(x) = \dfrac{1}{x+3} - 1$

D. $f(x) = \dfrac{-1}{x-3} - 1$

E. None of the above

---

7. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-3x}{-6x-7} + \frac{-6x^2}{-30x^2-47x-14} = \frac{-3}{5x+2}$$

A. $x_1 \in [-1.64, -0.93]$ and $x_2 \in [-0.7, 1.1]$

B. $x \in [-1.64, -0.93]$

C. $x \in [-0.54, -0.38]$

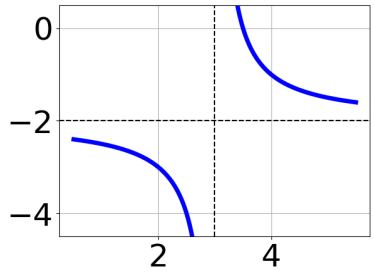
D. All solutions lead to invalid or complex values in the equation.

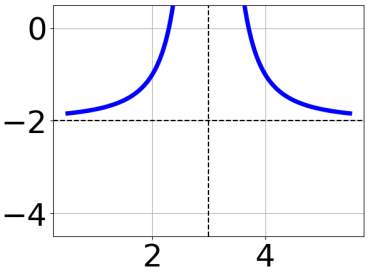
E. $x_1 \in [-0.6, -0.44]$ and $x_2 \in [-3.7, -1.3]$

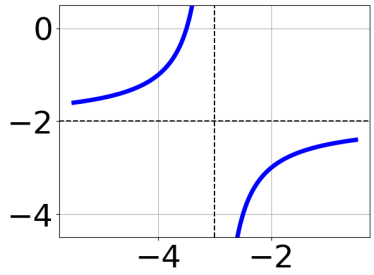
---

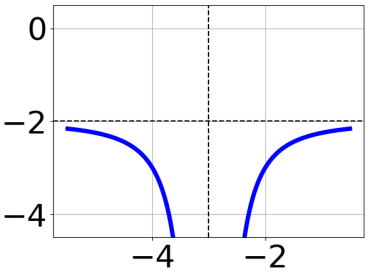
8. Choose the graph of the equation below.

$$f(x) = \frac{-1}{(x-3)^2} - 2$$

A. 

C. 

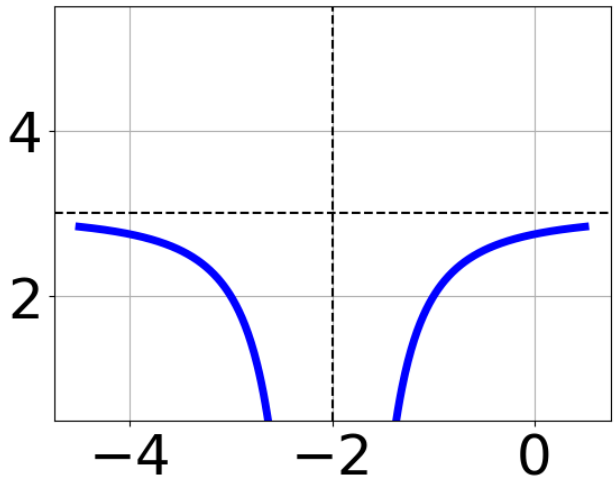
B. 

D. 

E. None of the above.

---

9. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{(x+2)^2} + 3$

B. $f(x) = \dfrac{1}{x-2} + 3$

C. $f(x) = \dfrac{1}{(x-2)^2} + 3$

D. $f(x) = \dfrac{-1}{x+2} + 3$

E. None of the above

---

10. Determine the domain of the function below.

$$f(x) = \frac{5}{15x^2 + 42x + 24}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-20.36, -19.15]$ and b $[-18.44, -17.43]$

B. All Real numbers except $x = a$, where $a \in [-2.3, -1.32]$

C. All Real numbers.

D. All Real numbers except $x = a$, where $a \in [-20.36, -19.15]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.3, -1.32]$ and $b \in [-1, -0.34]$

---

11. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{4}{7x - 5} + 3 = \frac{-3}{42x - 30}$$

A. $x_1 \in [0.18, 0.4]$ and $x_2 \in [-0.5, 2.5]$

B. $x \in [-1.11, -0.8]$

C. All solutions lead to invalid or complex values in the equation.

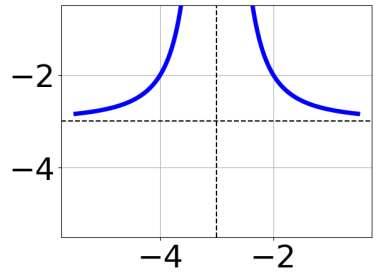
D. $x_1 \in [-1.11, -0.8]$ and $x_2 \in [-0.5, 2.5]$

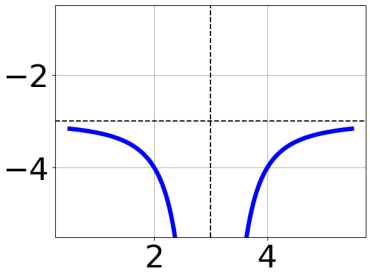
E. $x \in [-1.5, 1.5]$

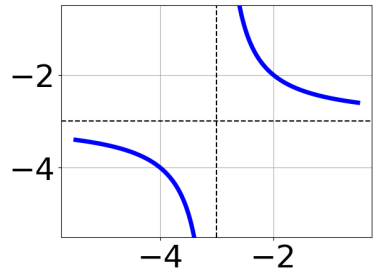
---

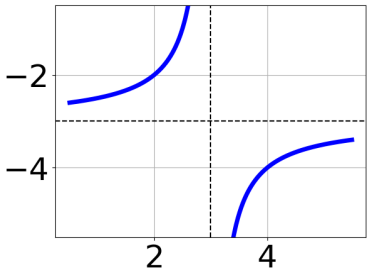
12. Choose the graph of the equation below.

$$f(x) = \frac{1}{(x+3)^2} - 3$$

A. 

C. 

B. 

D. 

E. None of the above.

---

13. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{3x}{-2x+6} + \frac{-4x^2}{-8x^2+28x-12} = \frac{-4}{4x-2}$$

A. $x_1 \in [-1.06, -0.31]$ and $x_2 \in [1.54, 2.91]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [2.69, 3.2]$ and $x_2 \in [0.49, 1.23]$

D. $x \in [0.38, 1.49]$

E. $x \in [2.69, 3.2]$

---

14. Determine the domain of the function below.

$$f(x) = \frac{5}{12x^2+2x-24}$$

A. All Real numbers except $x = a$, where $a \in [-1.5, -0.5]$

B. All Real numbers except $x = a$, where $a \in [-24, -20]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.5, -0.5]$ and $b \in [-0.67, 2.33]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-24, -20]$ and $b \in [11, 13]$

E. All Real numbers.

---

15. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-4}{-6x - 5} + -8 = \frac{5}{-12x - 10}$$

A. $x_1 \in [-0.7, 0.3]$ and $x_2 \in [-0.03, 2.97]$

B. $x_1 \in [-0.7, 0.3]$ and $x_2 \in [-0.65, 0.35]$

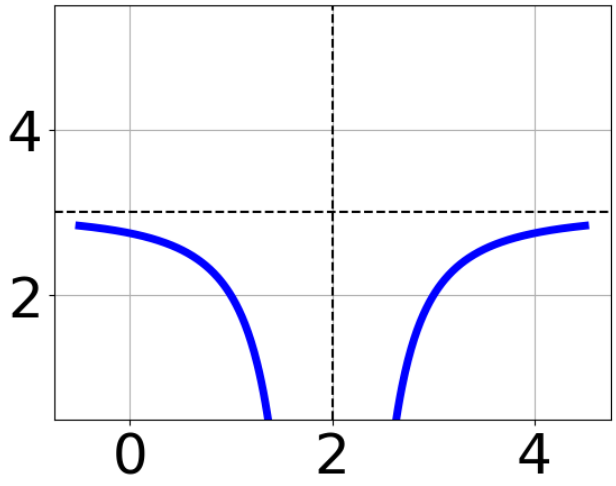
C. All solutions lead to invalid or complex values in the equation.

D. $x \in [-0.03, 3.97]$

E. $x \in [-0.7, 0.3]$

---

16. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x-2} + 3$

B. $f(x) = \dfrac{1}{(x+2)^2} + 3$

C. $f(x) = \dfrac{-1}{(x-2)^2} + 3$

D. $f(x) = \dfrac{1}{x+2} + 3$

E. None of the above

---

17. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-2x}{-4x-4} + \frac{-4x^2}{-20x^2-12x+8} = \frac{5}{5x-2}$$

A. $x \in [-0.13, 0.5]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [-0.87, -0.46]$ and $x_2 \in [-3.5, -0.9]$

D. $x_1 \in [-0.87, -0.46]$ and $x_2 \in [1.8, 3.3]$

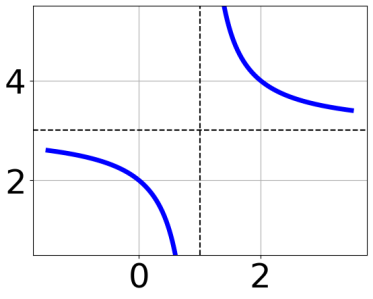
E. $x \in [2.16, 3.28]$

---

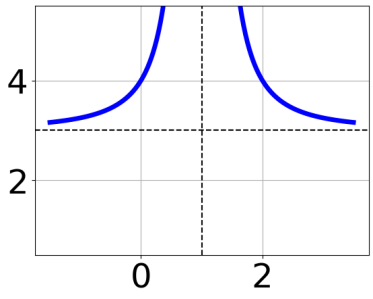
18. Choose the graph of the equation below.

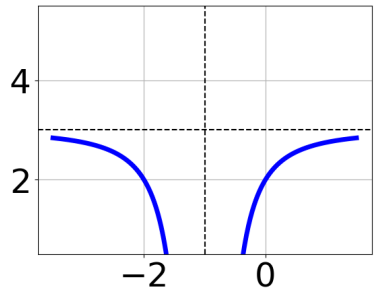
$$f(x) = \frac{-1}{x+1} + 3$$

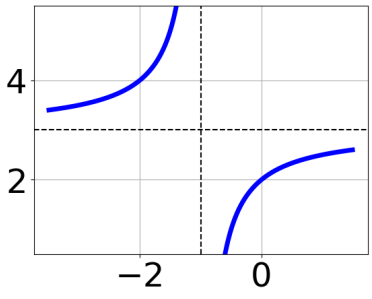
A.



B.



C. 

D. 

E. None of the above.

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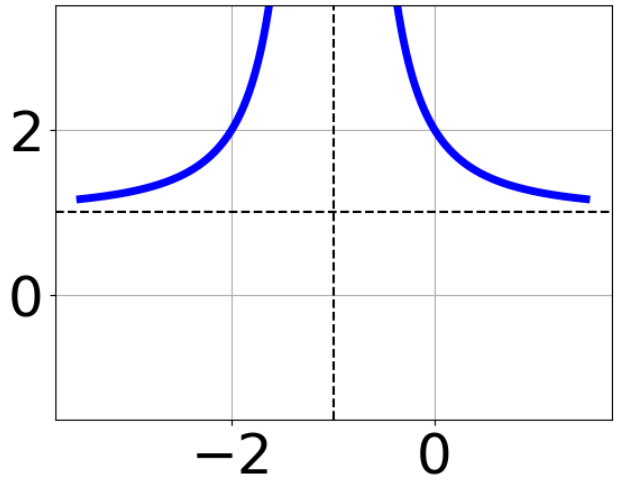
19. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{(x+1)^2} + 1$

B. $f(x) = \dfrac{1}{x+1} + 1$

C. $f(x) = \dfrac{-1}{x-1} + 1$

D. $f(x) = \dfrac{-1}{(x-1)^2} + 1$

E. None of the above

---

20. Determine the domain of the function below.

$$f(x) = \frac{6}{9x^2 - 25}$$

A. All Real numbers except $x = a$, where $a \in [-4.67, 1.33]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-4.67, 1.33]$ and $b \in [-0.33, 3.67]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-16, -11]$ and $b \in [15, 20]$

E. All Real numbers except $x = a$, where $a \in [-16, -11]$

---

21. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-54}{-18x - 36} + 1 = \frac{-54}{-18x - 36}$$

A. $x_1 \in [-2, -1]$ and $x_2 \in [-3, -1]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [0, 3]$

D. $x_1 \in [-2, -1]$ and $x_2 \in [1, 4]$

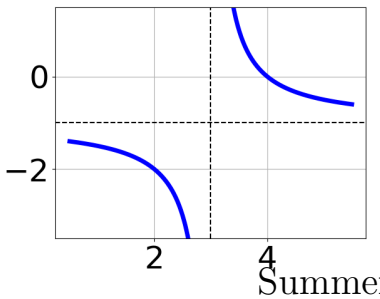
E. $x \in [-3.0, -1.0]$

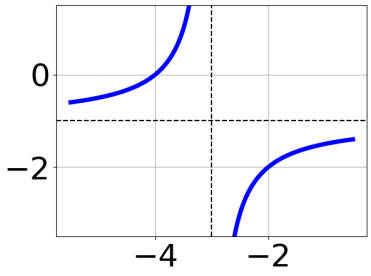
---

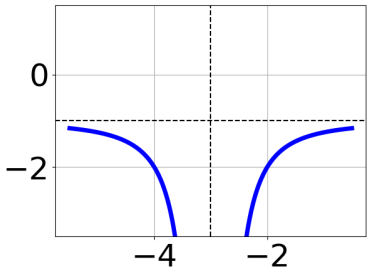
22. Choose the graph of the equation below.

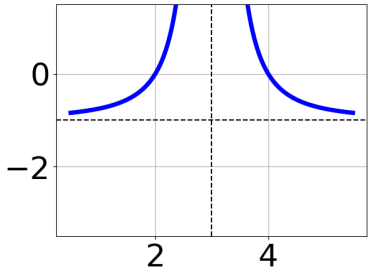
$$f(x) = \frac{1}{x - 3} - 1$$

A.



B. 

D. 

C. 

E. None of the above.

---

23. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7x}{2x-4} + \frac{-5x^2}{8x^2-20x+8} = \frac{4}{4x-2}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [1.95, 3.73]$ and $x_2 \in [0.46, 0.75]$

C. $x \in [0.03, 1.35]$

D. $x \in [1.95, 3.73]$

E. $x_1 \in [-1.93, -0.13]$ and $x_2 \in [0.71, 1.15]$

---

24. Determine the domain of the function below.

$$f(x) = \frac{3}{18x^2+30x+12}$$

A. All Real numbers except $x = a$, where $a \in [-1.93, -0.86]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.93, -0.86]$ and $b \in [-0.77, -0.49]$

C. All Real numbers.

D. All Real numbers except $x = a$, where $a \in [-24.6, -23.08]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-24.6, -23.08]$ and $b \in [-9.56, -8.05]$

---

25. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7}{-6x+9} + 3 = \frac{-8}{-18x+27}$$

A. $x_1 \in [-2.96, 1.04]$ and $x_2 \in [1.98, 2.19]$

B. $x_1 \in [0.04, 4.04]$ and $x_2 \in [2.32, 2.41]$

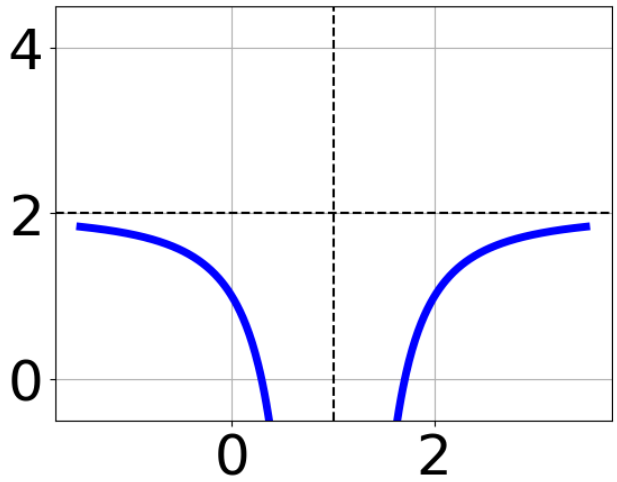
C. $x \in [-2.96, 1.04]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [2.04, 3.04]$

---

26. Choose the equation of the function graphed below.



A. $f(x) = \frac{1}{(x+1)^2} + 4$

B. $f(x) = \frac{-1}{x-1} + 4$

C. $f(x) = \dfrac{-1}{(x-1)^2} + 4$

D. $f(x) = \dfrac{1}{x+1} + 4$

E. None of the above

---

27. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{6x}{7x+6} + \frac{-3x^2}{49x^2+70x+24} = \frac{-2}{7x+4}$$

A. $x \in [-0.9, -0.81]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [-0.9, -0.81]$ and $x_2 \in [-0.6, -0.54]$

D. $x \in [-0.64, -0.57]$

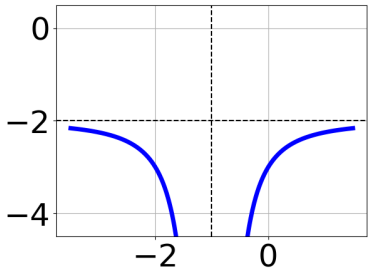
E. $x_1 \in [-0.8, -0.64]$ and $x_2 \in [-0.27, 0.37]$

---

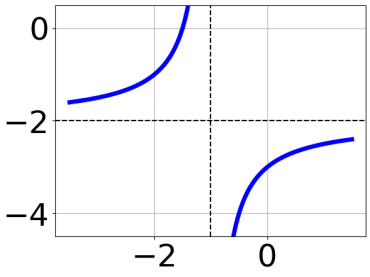
28. Choose the graph of the equation below.

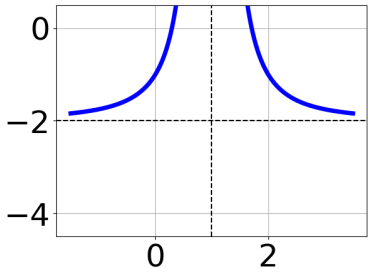
$$f(x) = \frac{-1}{(x+1)^2} - 2$$

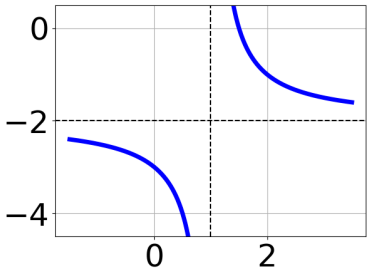
A.



B.



C. 

D. 

E. None of the above.

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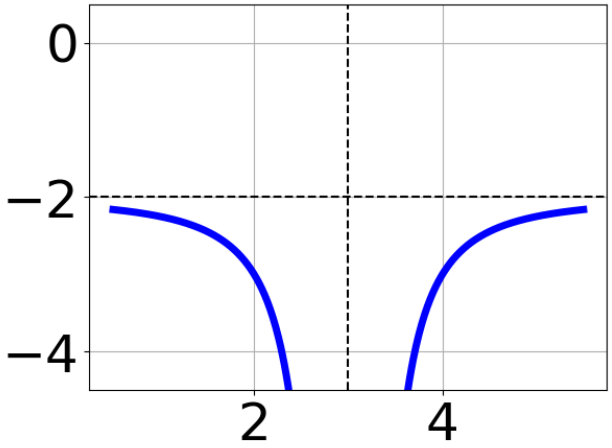
29. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x-3} - 2$

B. $f(x) = \dfrac{-1}{(x-3)^2} - 2$

C. $f(x) = \dfrac{1}{x+3} - 2$

D. $f(x) = \dfrac{1}{(x+3)^2} - 2$

E. None of the above

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30. Determine the domain of the function below.

$$f(x) = \frac{4}{12x^2 + 36x + 24}$$

A. All Real numbers except $x = a,$ where $a \in [-2.16, -1.71]$

B. All Real numbers except $x = a$ and $x = b,$ where $a \in [-18.94, -17.83]$ and b $[-16.27, -15.21]$

C. All Real numbers except $x = a,$ where $a \in [-18.94, -17.83]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b,$ where $a \in [-2.16, -1.71]$ and $b \in$ $[-1.38, -0.25]$
